



# Statement of Ownership, Management, and Circulation (All Periodicals Publications Except Requester Publications)

1. Publication Title Journal of Materials Research	2. Publication Number 760 - 930	3. Filing Date 10-1-2016
4. Issue Frequency Twice Monthly	5. Number of Issues Published Annually 24	6. Annual Subscription Price \$1,693.00
7. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4®) Cambridge University Press 1 Liberty Plaza, New York, NY 10006-1404		Contact Person Nina Iammatteo Telephone (Include area code) 2123375004

8. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer)  
Cambridge University Press  
Edinburgh Building, Cambridge CB2 2RU, England

9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank)

Publisher (Name and complete mailing address)  
Cambridge University Press  
1 Liberty Plaza, New York, NY 10006-1404

Editor (Name and complete mailing address)  
Gary L Messing  
The Penn State University, USA

Managing Editor (Name and complete mailing address)  
Simon Ross, Cambridge University Press, 1 Liberty Plaza, New York, NY 10006-1404

10. Owner (Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)

Full Name	Complete Mailing Address
Materials Research Society	506 Keystone Drive Warrendale, PA 15086-7537

11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities. If none, check box  None

Full Name	Complete Mailing Address

12. Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one)  
The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes:  
 Has Not Changed During Preceding 12 Months  
 Has Changed During Preceding 12 Months (Publisher must submit explanation of change with this statement)

https://doi.org/10.1557/jmr.2016.482. Published online by Cambridge University Press

13. Publication Title		14. Issue Date for Circulation Data Below	
Journal of Materials Research		AUGUST 2016	
15. Extent and Nature of Circulation		Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies ( <i>Net press run</i> )		324	306
b. Paid Circulation ( <i>By Mail and Outside the Mail</i> )	(1) Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 (Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	86	84
	(2) Mailed In-County Paid Subscriptions Stated on PS Form 3541 ( <i>Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies</i> )	0	0
	(3) Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS®	146	145
	(4) Paid Distribution by Other Classes of Mail Through the USPS (e.g., First-Class Mail®)	0	0
c. Total Paid Distribution [ <i>Sum of 15b (1), (2), (3), and (4)</i> ]		232	229
d. Free or Nominal Rate Distribution ( <i>By Mail and Outside the Mail</i> )	(1) Free or Nominal Rate Outside-County Copies included on PS Form 3541	0	0
	(2) Free or Nominal Rate In-County Copies Included on PS Form 3541	0	0
	(3) Free or Nominal Rate Copies Mailed at Other Classes Through the USPS (e.g., First-Class Mail)	0	0
	(4) Free or Nominal Rate Distribution Outside the Mail ( <i>Carriers or other means</i> )	10	10
e. Total Free or Nominal Rate Distribution ( <i>Sum of 15d (1), (2), (3) and (4)</i> )		10	10
f. Total Distribution ( <i>Sum of 15c and 15e</i> )		242	239
g. Copies not Distributed ( <i>See Instructions to Publishers #4 (page #3)</i> )		82	67
h. Total ( <i>Sum of 15f and g</i> )		324	306
i. Percent Paid ( <i>15c divided by 15f times 100</i> )		96%	96%

\* If you are claiming electronic copies, go to line 16 on page 3. If you are not claiming electronic copies, skip to line 17 on page 3.



# Statement of Ownership, Management, and Circulation (All Periodicals Publications Except Requester Publications)

16. Electronic Copy Circulation	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Paid Electronic Copies	0	0
b. Total Paid Print Copies (Line 15c) + Paid Electronic Copies (Line 16a)	232	229
c. Total Print Distribution (Line 15f) + Paid Electronic Copies (Line 16a)	242	239
d. Percent Paid (Both Print & Electronic Copies) (16b divided by 16c × 100)	96%	96%

I certify that 50% of all my distributed copies (electronic and print) are paid above a nominal price.

17. Publication of Statement of Ownership

If the publication is a general publication, publication of this statement is required. Will be printed in the November issue of this publication.

Publication not required.

18. Signature and Title of Editor, Publisher, Business Manager, or Owner

Date

10-1-2016

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).



2017 **MRS**<sup>®</sup> SPRING MEETING & EXHIBIT  
April 17–21, 2017 | Phoenix, Arizona

# PREREGISTRATION OPENS MID-JANUARY

## CHARACTERIZATION, THEORY AND MODELING

- CM1 Emergent Material Properties and Phase Transitions Under Pressure
- CM2 Advanced Numerical Algorithms for Metallic Systems at the Mesoscale in Materials Science
- CM3 Computer-Based Modeling and Experiment for the Design of Soft Materials
- CM4 *In Situ* Electron Microscopy of Dynamic Materials Phenomena
- CM5 Mechanically Coupled Properties, Phenomena and Testing Methods in Small-Scale and Low-Dimensional Systems
- CM6 Dislocation Microstructures and Plasticity
- CM7 Genomic Approaches to Accelerated Materials Innovation

## ELECTRONIC DEVICES AND MATERIALS

- ED1 Silicon-Carbide, Diamond and Related Materials for Quantum Technologies
- ED2 Materials and Devices for Neuromorphic-Engineering and Brain-Inspired Computing
- ED3 Physics, Chemistry and Materials for Beyond Silicon Electronics
- ED4 Luminescent Materials for Photon Upconversion
- ED5 Photoactive Nanoparticles and Nanostructures
- ED6 Nanostructured Quantum-Confined States for Advanced Optoelectronics
- ED7 Materials and Device Engineering for Beyond the Roadmap Devices in Logic, Memory and Power
- ED8 Development and Integration of Organic and Polymeric Materials for Thin-Film Electronic Devices
- ED9 Advanced Interconnects for Logic and Memory Applications—Materials, Processes and Integration
- ED10 Material Platforms for Plasmonics and Metamaterials—Novel Approaches Towards Practical Applications
- ED11 Phase-Change Materials and Their Applications—Memories, Photonics, Displays and Non-von Neumann Computing
- ED12 Quantum Sensing, Metrology and Devices
- ED13 Novel Photonic, Electronic and Plasmonic Phenomena in Materials
- ED14 Molecular and Colloidal Plasmonics—Synthesis and Applications

## ENERGY STORAGE AND CONVERSION

- ES1 Perovskite Solar Cells—Towards Commercialization
- ES2 High-Capacity Electrode Materials for Rechargeable Energy Storage
- ES3 Materials for Multivalent Electrochemical Energy Storage
- ES4 Nanogenerators and Piezotronics
- ES5 Advances in Materials, Experiments and Modeling for Nuclear Energy
- ES6 Mechanics of Energy Storage and Conversion—Batteries, Thermoelectrics and Fuel Cells
- ES7 (Photo)electrocatalytic Materials and Integrated Assemblies for Solar Fuels Production—Discovery, Characterization and Performance
- ES8 Caloric Materials for Energy-Efficient Applications
- ES9 Surfaces, Coatings and Interfaces in Concentrated Solar Energy Applications
- ES10 Frontiers in Oxide Interface Spintronics—Magnetoelectrics, Multiferroics and Spin-Orbit Effects
- ES11 Advanced and Highly Efficient Photovoltaic Devices
- ES12 Soft Magnetic Materials for Next-Generation Power Electronics
- ES13 Interfaces and Interphases in Electrochemical Energy Storage and Conversion
- ES14 Thin-Film Chalcogenide Semiconductor Photovoltaics

## NANOMATERIALS

- NM1 Emerging Non-Graphene 2D Materials
- NM2 Nanoscale Heat Transport—From Fundamentals to Devices
- NM3 Aerogels and Aerogel-Inspired Materials
- NM4 Novel Catalytic Materials for Energy and Environment
- NM5 Frontiers in Terahertz Materials and Technology
- NM6 Mechanical Behavior of Nanostructured Composites
- NM7 Semiconductor Nanowires for Energy Applications
- NM8 2D Materials—Macroscopic Perfection vs. Emerging Nanoscale Functionality
- NM9 High-Performance Metals and Alloys in Extreme Conditions
- NM10 Micro/Nano Assembling, Manufacturing and Manipulation for Biomolecular and Cellular Applications

## SOFT MATERIALS AND BIOMATERIALS

- SM1 Bioelectronics—Materials, Processes and Applications
- SM2 Advanced Multifunctional Fibers and Textiles
- SM3 Advanced Biomaterials for Neural Interfaces
- SM4 A Soft Future—From Electronic Skin to Robotics and Energy Harvesting
- SM5 Aqueous Cytomimetic Materials
- SM6 Materials in Immunology—From Fundamental Material Design to Translational Applications
- SM7 Emerging Membrane Materials for Sustainable Separations
- SM8 Advanced Polymers

### Meeting Chairs

**Christopher J. Bettinger** Carnegie Mellon University  
**Stefan A. Maier** Imperial College London  
**Alfonso H.W. Ngan** The University of Hong Kong  
**W. Jud Ready** Georgia Institute of Technology  
**Eli A. Sutter** University of Nebraska—Lincoln

[www.mrs.org/spring2017](http://www.mrs.org/spring2017)

### Don't Miss These Future MRS Meetings!

2017 MRS Fall Meeting & Exhibit  
November 26 – December 1, 2017, Boston, Massachusetts

2018 MRS Spring Meeting & Exhibit  
April 2 – 6, 2018, Phoenix, Arizona

**MRS** MATERIALS RESEARCH SOCIETY<sup>®</sup>  
Advancing materials. Improving the quality of life.

506 Keystone Drive • Warrendale, PA 15086-7573  
Tel 724.779.3003 • Fax 724.779.8313  
info@mrs.org • www.mrs.org



Submission Deadline—April 1, 2017

## Jan van der Merwe: Epitaxy and the Computer Age

Fabrication of well-ordered semiconductor thin films by precise deposition control of atomic layers is known to semiconductor engineers and device physicists as epitaxy and Frank-van der Merwe growth. Understanding and mastering this process was the precondition for the modern computer technology and has led mankind into the digital era and information age. The theoretical foundations for this quantum leap in human and technological civilization were laid by the South African physicist Jan H. van der Merwe, who passed away on February 28, 2016, on his 94th birthday.

To honor the contributions of Dr. van der Merwe, the *Journal of Materials Research* will publish a Focus Issue in 2017 to present latest developments in epitaxy, with the focus on the fundamental materials science and the past (historic perspective), present, and future of the field.

### Contributed papers are solicited in the following areas:

- ◆ Fundamental studies in epitaxy
- ◆ Semiconductor materials, advanced structures and systems
- ◆ Growth of single crystalline materials
- ◆ Surface and interface properties of semiconductor/electrolyte junctions
- ◆ Nanomaterials and heterostructures
- ◆ Overlayers, underlayers, and the like
- ◆ Modeling and simulation of semiconductors, interfaces and transport processes
- ◆ Short reviews of materials and structures

Application properties may be related, in particular, to wear-, corrosion-, thermal shock-resistance, structural integrity under mechanical and thermal loads, ballistic performance of armor ceramics, particular electrical properties related to fuel cells, insulators, supercapacitors, semiconductors, conductors and sputtering targets, optical transmittance, catalytic properties, permeation of porous structures, and biomedical applications. The papers on the proposed topic will be of interest and importance to specialists from academia, research centers, and industry.

### GUEST EDITORS

**Artur Braun**, Empa, Switzerland

**Mmantsae M. Diale**, University of Pretoria, South Africa

**Johan B. Malherbe**, University of Pretoria, South Africa

**Max Braun**, University of Pretoria, South Africa

### MANUSCRIPT SUBMISSION

To be considered for this issue, new and previously unpublished results significant to the development of this field should be presented. If you would prefer to write a review, please submit a short proposal to one of the Guest Editors outlining the review for approval. The manuscripts must be submitted via the *JMR* electronic submission system by **April 1, 2017**. Manuscripts submitted after this deadline will not be considered for the issue due to time constraints on the review process. Submission instructions may be found at [www.mrs.org/jmr-instructions](http://www.mrs.org/jmr-instructions). Please select "Focus Issue: *Jan van der Merwe: Epitaxy and the Computer Age*" as the manuscript type. **Note our manuscript submission minimum length of 6,000 words, with a maximum of 8 figures.** All manuscripts will be reviewed in a normal but expedited fashion. Papers submitted by the deadline and subsequently accepted will be published in the Focus Issue. Other manuscripts that are acceptable but cannot be included in the issue will be scheduled for publication in a subsequent issue of *JMR*.

**[jmr@mrs.org](mailto:jmr@mrs.org)**  
Please contact [jmr@mrs.org](mailto:jmr@mrs.org) with questions.

CALL FOR PAPERS



**give to the  
causes you  
care about**



# **Education & Outreach University Chapters Awards**



**MATERIALS RESEARCH SOCIETY  
FOUNDATION**

**Make the most of your giving  
[www.mrs.org/foundation](http://www.mrs.org/foundation)**

# MATERIALS RESEARCH SOCIETY®

## 2016 Board of Directors

### Officers

Kristi S. Anseth, *President*  
Oliver Kraft, *Past President*  
Susan Trolier-McKinstry, *Vice President*  
Sean J. Hearne, *Secretary*  
David J. Parrillo, *Treasurer*  
Todd M. Osman, *Executive Director*

### Directors

Charles T. Black  
Alexandra Boltasseva  
C. Jeffrey Brinker  
Matt Copel  
Paul Drzaic  
Yury Gogotsi  
Hideo Hosono  
Young-Chang Joo  
Karen L. Kavanagh  
Kornelius Nielsch  
Christine Ortiz  
Sabrina Sartori  
Magaly Spector  
Loucas Tsakalacos  
Anke Weidenkaff

## 2016 Publications Committee

R.A. Vaia, *Chair*  
S.P. Baker, *Editors Subcommittee*  
A.J. Hurd, *New Publication Products Subcommittee*  
R.J. Nemanich, *Publications Quality Subcommittee*

## 2016 MRS Committee Chairs

B.M. Clemens, *Academic Affairs*  
A. Polman, *Awards*  
K. Whittlesey, *Government Affairs*  
D.S. Ginley, *Meetings*

Y. Chabal, *Member Engagement*  
E. Kupp, *Public Outreach*  
R.A. Vaia, *Publications*

## MRS Headquarters

T.M. Osman, *Executive Director*  
J.A. Dillen, *Director of Finance and Administration*  
D. Dozier, *Director of Government Affairs*  
P.A. Hastings, *Director of Meeting Activities*  
E.M. Kiley, *Director of Communications*

## Journal of Materials Research Founding Sponsors

Allied-Signal Inc.  
Xerox Corporation

## About the Materials Research Society

The Materials Research Society (MRS®) is a not-for-profit scientific association founded in 1973 to promote interdisciplinary goal-oriented basic research on materials of technological importance. Membership in the Society includes over 16,000 scientists from industrial, government, and university research laboratories in the United States and abroad.

The Society's interdisciplinary approach to the exchange of technical information is qualitatively different from that provided by single-discipline professional societies because it promotes technical exchange across the various fields of science affecting materials development. MRS sponsors two major international annual meetings encompassing many topical symposia, as well as numerous single-topic scientific meetings each year. It recognizes professional and technical excellence, conducts tutorials, and fosters technical exchange in various local geographical regions through Section activities and Student Chapters on university campuses.

Disclaimer: Authors of each article appearing in this Journal are solely responsible for all contents in their article(s) including accuracy of the facts, statements, and citing resources. Facts and opinions are solely the personal statements of the respective authors and do not necessarily represent the views of the editors, the Materials Research Society, or Cambridge University Press.

MRS journals maintain a proud tradition of editorial excellence in scientific literature. The *Journal of Materials Research*, the archival journal spanning fundamental developments in materials science, is published twenty-four times a year by MRS and Cambridge University Press. *MRS Bulletin* is a premier source for comprehensive research trends and a timely scan of professional activities. *MRS Communications* is a full-color letters and perspectives journal focused on groundbreaking work across the spectrum of materials research. *MRS Energy & Sustainability—A Review Journal* publishes reviews on key topics in materials research and development as they relate to energy and sustainability. *MRS Advances* is a peer-reviewed online-only journal featuring impactful and emerging research, designed to reflect the way materials researchers work, write, publish and share their results.

The *Journal of Materials Research* is free electronically to all MRS regular and student members. See inside front cover for subscription rates for *Journal of Materials Research*.

MRS is an Affiliated Society of the American Institute of Physics and participates in the international arena of materials research through associations with professional organizations.

For further information on the Society's activities, contact MRS Headquarters, 506 Keystone Drive, Warrendale, PA 15086-7573; telephone (724) 779-3003; fax (724) 779-8313.



Postmaster—Send change of address notice to:

Cambridge University Press  
One Liberty Plaza, 20th Floor,  
New York, NY 10006

A publication of the  
**MRS** MATERIALS RESEARCH SOCIETY  
*Advancing materials. Improving the quality of life.*

Periodical Rate Postage Paid at New York, NY  
and Additional Mailing Offices

ISSN: 0884-2914